

**Tetra Tech, Inc. Progress Report
EPA Contract No. EP-C-17-046
July 27, 2020 through August 23, 2020**

Task Order (TO) #003

**Chesapeake Bay TMDL Midpoint Watershed
Implementation Plan and Modeling Support**

**EPA TO-Level Contracting Officer
Representative (TOCOR)**

**Rebecca Hindin
Phone # (410) 267-5770**

Tetra Tech Technical Monitor:

**Ex. 4 CBI
Phone # (703) 385-6000**

Tetra Tech TO Leader:

**Ex. 4 CBI
Phone # (703) 385- Ex. 4 CBI**

ACTIVITIES THIS REPORTING PERIOD:

Task 1. Kickoff and Management

- Prepared and submitted invoice and progress report.
- Communicated regularly with the TOCOR.

Task 2. BMP Panels

- Wastewater Workgroup Support (TD #5)
 - This TD is complete.

Task 3. Modeling Input Data

- Model Report Editing (TD #10)
 - This TD is complete.

Task 4. WIP Support

- Communications Support (TD #1)
 - Communicated with the task leader regarding the requested support and overall project timeline. Prepared agendas and submitted summaries and action items for status calls.
 - Continued to update the case studies spreadsheet with additional case studies leads identified by the WEAT team, Communications team, Bay Journal, and Bay News and Chesapeake Current list serves.
 - Submitted an updated recommendations spreadsheet with color coding and priority assignments on 7/28/2020.
 - Continued to research other data sources to identify recreation economic data that could be used to develop state-specific graphics. Submitted draft recommendations on 7/30/20.
 - Developed and submitted the draft Complete Streets case study for the city of Lancaster, PA on 7/30/20.
 - Continued work on the "Expanding the Urban Tree Canopy in Prince George's County, Maryland" case study. Awaiting a quote from the contact to incorporate into the story.

- WV WIP Support (TD #2)
 - Participated in Modeling Team meetings on 7/28, 8/4, 8/11, 8/18/20.
 - Participated in WQGIT Mtg. on 7/27/20.
 - Provided technical assistance to DEP re: climate change allocation options on multiple days.
 - Participated in call with WV Team re: 2yr milestone progress on 8/13/20.
 - Provided technical assistance to DEP re: reissuance of Construction Stormwater General Permit as related to CB program on 8/11/20.
 - Participated as WV rep in call with new WWTWG and coordinator on 8/20/20.
 - Provided technical assistance to DEP Permits regarding significant facility bubble/offset concepts on 8/6/20.
- Statistical Support (TD #6)
 - Participated and presented at various technical conference calls.
 - Completed draft Patuxent River analyses.
 - Sent technical emails to state stakeholders about converting data to survival::Surv objects.
- DE WIP Support (TD #7)
 - This TD is complete.
- MD Septic Support (TD #4)
 - This TD is complete.
- WV GI Planning (TD #8)
 - Received confirmation from Martinsburg Public Works Department that they had no additional changes to the draft workshop and concept design report.
 - Finalized report and distributed to WVDEP, City of Martinsburg and Region 9 Regional Planning and Development Council.
- Conowingo WIP Support (TD #9)
 - This TD is complete.
- Trading and Offsets Support (TD #11)
 - No progress to report.
- SAV Fact Sheets (TD #12)
 - This TD is complete.
- New York Developed Sector BMP Support (TD #13)
 - Drafting statistical survey procedures for deliverable #2.

Task 5. Decision Support Tools

- Decision Support Tool Development (Work conducted by subcontractors DEC and J7) (TD #3):
 - Participated in Modeling and CAST project management meetings to address any modeling issues and determine updates/changes, provide project status updates (CAST management team meetings – 7/28/20, 8/4/20, 8/18/20; CAST development team meetings – 8/6/20).
 - Reviewed CAST development on a weekly basis and updated website and data products as needed.
 - Interfaced between states and localities using sound data to find areas of agreement when there is ambiguity about implementation and built consensus about resolving those ambiguities.
 - Provided training and analysis to EPA/CBPO staff and responded to questions.
 - Provided training to and answered questions on CAST-2017d and CAST-2019.
 - Discussed approaches for handling BMPs in the models, including scheduling of model changes.
 - Developed content for CAST newsletter.
 - Updated the BMP trends over time data visualization on CAST for wastewater.

- Began developing WW data visualization that will be added to CAST.
- Worked with Dr. Lim, VT, on NSF proposal.
- Updated marginal load change analysis and cost/lb. reduced graphs on CAST.
- Planned for future versions of CAST.
- Conducted analyses to assist CAST users in understanding the 2019 Progress.
- Responded to MDE on stream bed and bank calculations.
- Worked with Emily Trentacoste and her contractors on BMP Confidence Metric.
- Responded to user questions about data in CAST and helped with analyzing results.
- Completed several requests for CAST 2019 data.
- Ran BMP isolation scenarios for 2019 progress with updated costs.
- Completed wastewater facility updates.
- Began modeling data for wastewater outfall geocoding.
- Continued improvement of wastewater range checks.
- Continued planning for CAST 2021.
- Began NEIEN portal development.
- WQGIT - 7/27/20
- MDE/EPA/DoD - 7/28/20
- CAST and State Coordination - 7/30/20
- NSF SCC proposal with Theo Lim (VT) - 8/3/20
- Federal Agency Progress Evaluation - 8/3, 8/10, 8/17/20
- Chesapeake Conservancy Confidence Metric - 8/4/20
- Watershed Technical Workgroup - 8/6/20
- Biosolids Data for CAST user - 8/6/20
- CAST tutorial for Arlington - 8/6/20
- Biweekly Implementation Team - 8/12/20
- Development, Deployment, and Maintenance of CBPO Monitoring and Modeling Applications in Cloud-based Environments (TD #14)
 - No progress to report

Task 6. Exchange Network-Based BMP Tracking

- No TDs assigned at this time.

DELIVERABLES TO DATE:

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Task 2. BMP Panels		
<i>TD #5. Wastewater Workgroup Support</i>		
Powerpoint slides for WWTWG presentation of Boat Pump Out report	4/18	1
Final OWTS BMP report for WWTWG approval	5/18	3
Final draft Boat Pump-Out expert panel report	7/18	2
Powerpoint slides for WQGIT presentation of Boat Pump Out report	7/18	1
Powerpoint slides for Aug. WQGIT presentation of Boat Pump Out report	8/18	1
Final Boat Pump-Out expert panel report	8/18	2
Task 3. Modeling Input Data		
<i>TD #10. Model Report Editing</i>		
Report Template	2/19	2
Task Approach	3/19	3
Front Matter (formatted, edited Word file)	3/19	2

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Chapter 1 (formatted, edited Word file)	3/19	2
Chapter 2 (formatted, edited Word file)	3/19	2
Task Approach (annotated with comments from 3/19/16 conf call)	3/19	2
Chapter 3 (formatted, edited Word file)	4/19	2
Chapter 4 (formatted, edited Word file)	6/19	2
Chapter 5 (formatted, edited Word file)	6/19	2
Chapter 6 (formatted, edited Word file)	6/19	2
Chapter 7 (formatted, edited Word file)	7/19	2
Chapter 8 (formatted, edited Word file)	7/19	2
Chapter 9 (formatted, edited Word file)	7/19	2
Appendix A (formatted, edited Word file)	7/19	2
Appendix B (formatted, edited Word file)	7/19	2
Appendix C (formatted, edited Word file)	7/19	2
Appendix D (formatted, edited Word file)	7/19	2
Chapter 1 (revised Word file)	7/19	2
Chapter 2 (revised Word file)	7/19	2
Chapter 3 (revised Word file)	7/19	2
Chapter 4 (revised Word file)	7/19	2
Chapter 5 (revised Word file)	7/19	2
Chapter 6 (revised Word file)	7/19	2
List of Abbreviations and Acronyms (draft)	8/19	2
Appendix E (formatted, edited Word file)	8/19	2
Appendix F (formatted, edited Word file)	8/19	2
Appendix G (formatted, edited Word file)	8/19	2
Front Matter (formatted, edited Word file)	9/19	2
Chapter 7 (revised Word file)	9/19	2
Chapter 8 (revised Word file)	9/19	2
Chapter 9 (revised Word file)	9/19	2
Appendix A (revised Word file)	9/19	2
Appendix B (revised Word file)	9/19	2
Appendix C (revised Word file)	9/19	2
Appendix D (revised Word file)	9/19	2
Appendix E (revised Word file)	10/19	2
Appendix F (revised Word file)	10/19	2
Final Word files and PDF file of Chapters 0 through 9 and Appendices A through G	1/20	2
Task 4. WIP Support		
<i>TD #1. Communications Support</i>		
BMP icon	4/18	NA
Potential case studies and success stories (4 th set)	4/18	3

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Goals and outcomes graphic	5/18, 7/18, 8/18, 9/18, 10/18, 2/19, 3/19	NA
Edited BMP talking points	5/18	3
West Virginia healthy/unhealthy graphic	5/18, 7/18, 8/18, 9/18, 10/18, 2/19, 3/19	NA
Revised Model Fact Sheet	6/18	3
BMPs PowerPoint presentation and Fact Sheet	6/18	3
Potential case studies and success stories (5 th set)	9/18	3
Narrative of the Healthy/Unhealthy Fresh Water Graphic	10/18, 12/18, 3/19	3
Searchable Case Studies Spreadsheet	12/18, 3/19, 8/19, 9/19, 12/19, 2/20, 3/20, 7/20	3
Conowingo Request for Applications Summary	2/19	3
List of Benefits	2/19, 3/19, 6/19, 7/19, 8/19, 12/19, 1/20	1
Three ideas for co-benefit fact sheets	3/19	1
5 WEAT Case Study Templates	3/19	1
Goals and Outcomes Narrative	3/19	3
42 one-page summaries for case studies identified by Tetra Tech or the Bay Program	3/19	1
5 WEAT one-page templates for case studies identified by the WEAT team	3/19	1
Fish Habitat Phase III Fact Sheet	4/19, 6/19, 7/19	3
Stream health infographic ideas	5/19	1
Edits to the “Community and Economic Benefits from Healthy Waters” document also called the “Top Ten List”	6/19, 7/19	3

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
VA Biofuels Case Study	6/19, 8/19	1
Benefits Talking Points	6/19	3
Interactive Version of the Goals and Outcomes Graphic	6/19	1
Action items/synopsis from task order calls	7/19, 8/19	1
Recommendations for case study buildouts	7/19	1
Climate Resiliency fact sheet	7/19	3
Case studies/success story template	7/19, 8/19	1
List of BMPs/conservation practices	7/19, 8/19	1
High resolution photos and permissions to use Glenn Rodes photos	7/19	1
2-page version of the Edits to the “Community and Economic Benefits from Healthy Waters” document also called the “Top Ten List”	8/19, 10/19	3
2-page mock-up of a state-specific case study fact sheet	8/19	1
West Virginia case study	8/19	3
Flash drive of associated case study 1-pagers	8/19	1
Mail merge output of the case studies in Word	9/19	1
Written comments for the new case studies template of River Hill Farm	9/19	3
Decisions for the Fish Economic Infographic	10/19	1
Maryland Fishing Economic Infographic	11/19	1
Map portion of Maryland Fishing Economic Infographic	11/19	1
Map portion of Pennsylvania Fishing Economic Infographic	12/19	1
Draft Virginia Fishing Economic Map	1/20	1
Draft Sediment Factsheet	2/20	3
Draft Urban Top Ten Fact Sheet	2/20	3
Draft Rural Top Ten Fact Sheet	2/20	3
Editorial suggestions for the Final Top Ten Fact Sheet	2/20	3
Map portion of Delaware Fishing Economic Infographic	3/20	1
Dupont Tree Plaza case study	3/20, 7/20	3
Research summary of economics data	5/20, 8/20	2
Draft Berkeley Springs, WV case study	5/20	3
Case study buildout recommendations	6/20, 8/20	1
Recreation economic data mock-up	6/20	1
Suggestions for greening efforts in Baltimore case study	6/20	1
Baltimore Green Network case study	7/20	3
City of Lancaster, PA case study	8/20	3
TD #2. WV WIP Support		
Participated in WQGIT mtgs. 4/9, 4/23	4/18	NA
Participated in WV WIP III planning and development mtgs 4/2, 4/26	4/18	NA
Attended and co-chaired Modeling Workgroup Quarterly mtg. 4/10, 4/11	4/18	NA
Participated in Modeling Team Mtgs. 4/3, 4/17, 4/24	4/18	NA
Participated in Wastewater Treatment Workgroup monthly mtg. 4/3	4/18	NA
Participated in Landuse Workgroup monthly mtg. 4/4	4/18	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in Wastewater Treatment Workgroup mtg. 5/1	5/18	NA
Participated in ITAT Mtg. 5/8	5/18	NA
Participated in mtg. of Steering Committee for STAC Climate Change Modeling Workshop 5/9	5/18	NA
Participated in Modeling Team Mtgs. 5/8, 5/15, 5/22	5/18	NA
Attended/presented at WV AG WIP3 Stakeholders Mtg. 5/14	5/18	NA
Participated in WQGIT mtg. 5/14	5/18	NA
Participated on Coregulator's Call 5/17	5/18	NA
Attended CBP Science for WV WIP3 Mtg. 5/21	5/18	NA
Participated in WV Trib Team Mtg. 5/31	6/18	NA
Participated in 2YR Milestone evaluation call between WV and EPA 5/31	6/18	NA
Chaired MWG Mtg. 6/5	6/18	NA
Participated in Wastewater Treatment Workgroup monthly mtg. 6/5	6/18	NA
Participated in WQGIT mtgs. 6/11, 6/18	6/18	NA
Participated in ITAT Mtg. 6/12	6/18	NA
Met w/WVDEP leadership to prepare for July 9 PSC mtg. 6/26	6/18	NA
Participated in Modeling Team Mtgs. 5/31 and 6/26	6/18	NA
Attended PSC Mtg. 7/9	7/18	NA
Chaired MWG Quarterly Mtg. 7/10	7/18	NA
Participated in WV Trib Team WIP III outreach planning meeting 7/11	7/18	NA
Participated in STAC workshop Steering Committee mtgs. 7/12, 7/26	7/18	NA
Participated in Modeling Team Mtg. 7/17	7/18	NA
Participated in WQGIT meeting 7/23	7/18	NA
Attended/supported WIP 3 public meeting in Martinsburg, WV 7/30	8/18	NA
Attended/supported WIP 3 public meeting in Moorefield, WV 7/31	8/18	NA
Participated in Modeling Team meetings on 7/31 and 8/14	8/18	NA
Participated in WV Trib Team meeting on 8/2	8/18	NA
Participated in WQGIT meeting on 8/13	8/18	NA
Participated in ITAT meeting on 8/14	8/18	NA
Participated in WV WIP III Stream Restoration subgroup meeting on 8/22	8/18	NA
Finalized "Strawman WIP3" input deck and sent to key trib team members w/ documentation 8/22	8/18	NA
Participated in Modeling Team meetings on 8/28, 8/29, 9/5 and 9/18/18	9/18	NA
Participated in WV Trib Team WIP 3 Planning meeting on 8/28/18	9/18	NA
Participated in kickoff meeting for Trib Team WIP 3 Cacapon Watershed subgroup on 8/29/18	9/18	NA
Co-chaired Modeling Workgroup meeting 9/11/18	9/18	NA
Participated in calls of the STAC Climate Change Modeling 2.0 Workshop steering committee 8/30, 9/5, 9/13/18 and attended workshop 9/24,25/18	9/18	NA
Provided first draft of WIP 3 text relative to streambank restoration for WV Trib Team WIP III Stream Restoration subgroup meeting on 9/17/18	9/18	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in WV Trib Team meeting on 10/2	10/18	NA
Participated in ITAT meeting on 10/9	10/18	NA
Participated in WQGIT meetings on 10/9 and 10/22	10/18	NA
Participated in Modeling Team meeting on 10/10	10/18	NA
Participated in WIP III Cacapon Watershed subgroup meeting on 10/15	10/18	NA
Chaired MWG Quarterly Mtg. 10/16,17	10/18	NA
Participated in WIP III Stream Restoration subgroup meeting on 10/23	10/18	NA
Participated in WQGIT meetings on 11/13	11/18	NA
Participated in WV Trib Team meeting on 11/7	11/18	NA
Participated in WIP III Stream Restoration subgroup meeting on 11/13	11/18	NA
Participated in Modeling Team meetings on 10/30 and 11/6	11/18	NA
Participated in Modeling Team meetings on 11/27, 12/4 and 12/18	12/18	NA
Participated in WQGIT meetings on 12/10	12/18	NA
Participated in ITAT meeting on 12/11	12/18	NA
Participated in GAAT call 11/28	12/18	NA
Participated in LUWG Meeting 12/12	12/18	NA
Participated in WV Trib Team meeting 12/12	12/18	NA
Participated in WIP3 Planning meeting 12/19	12/18	NA
Participated in Conowingo interview 12/21	12/18	NA
Participated in Modeling Team meetings on 1/29 and 2/5	2/19	NA
Participated in WIP3 Planning meeting 2/5	2/19	NA
Participated in WQGIT meeting on 2/11	2/19	NA
Participated in ITAT meeting on 2/12	2/19	NA
Participated in WV Trib Team meeting 2/12	2/19	NA
Chaired MWG Quarterly Mtg. 2/19,20	2/19	NA
Made WIP3 presentation to WVDEP 2/24	2/19	NA
Participated in WIP3 Planning meeting 3/7	3/19	NA
Participated in ITAT meeting on 3/12	3/19	NA
Participated in WQGIT meeting on 3/11 and 3/25	3/19	NA
Participated in Modeling Team meetings on 2/26 and 3/19	3/19	NA
Attended STAC AEIOU on 3/20 and 3/21	3/19	NA
Attended Climate Resiliency WG Mtg. on 2/25	3/19	NA
Attended WTWG Mtg. on 3/7	3/19	NA
Submitted Conservation history and goals to CBPO 2/26	3/19	NA
Submitted Draft WIP3 Wastewater Input deck to CBPO 2/27	3/19	NA
Submitted Draft WIP3 Cast scenario to CBPO 3/26	3/19	NA
Chaired MWG Quarterly Mtg. 4/2,3	4/19	NA
Participated in Modeling Team meetings on 4/9 and 4/16	4/19	NA
Participated in WQGIT meetings on 4/8 and 4/22	4/19	NA
Participated in ITAT meeting on 4/9	4/19	NA
Participated in WIP3 Planning meeting 4/4	4/19	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in WV Trib Team meeting 4/10	4/19	NA
Submitted Final Draft WIP3 Cast scenario to CBPO 4/10	4/19	NA
Participated in Modeling Team meetings on 5/7, 5/14, 5/21	5/19	NA
Participated in WQGIT meeting on 5/13	5/19	NA
Participated and presented at Climate Resiliency WG Mtg. on 5/20	5/19	NA
Participated in Conowingo Steering Committee meeting on 5/15	5/19	NA
Met on 5/6 with DEP leadership to prepare for PSC meeting	5/19	NA
Participated in Modeling Team meeting on 5/29	6/19	NA
Chaired MWG Mtg. on 5/30	6/19	NA
Participated in WQGIT meeting on 6/10	6/19	NA
Participated in ITAT meeting on 6/11	6/19	NA
Participated in WV Ag BMP Implementation Pilot call on 6/24	6/19	NA
Participated in WIP3 Planning meeting on 6/25	6/19	NA
Participated in Modeling Team meeting on 7/2	7/19	NA
Participated in WQGIT meeting on 7/8	7/19	NA
Co-chaired MWG Quarterly Mtg. 7/16,7/17	7/19	NA
Participated in poultry litter mtg. in Moorefield, WV on 7/11	7/19	NA
Participated in buffer workgroup kick-off call on 7/15	7/19	NA
Participated on EPA WIP3 evaluation call on 7/16	7/19	NA
Participated in WIP3 Planning meeting on 7/18	7/19	NA
Participated in Modeling Team meetings on 8/6, 8/13, 8/20	8/19	NA
Participated in WQGIT meeting on 8/19	8/19	NA
Participated in WIP3 Planning meeting on 8/8	8/19	NA
Participated in Modeling Team meetings on 9/3, 9/11, 9/24	9/19	NA
Participated in Wastewater Treatment Workgroup meeting on 9/3/19	9/19	NA
Participated in Landuse Workgroup meeting on 9/4/19	9/19	NA
Participated in WQGIT meeting on 9/9/19	9/19	NA
Co-chaired Modeling Workgroup meeting on 9/12/19	9/19	NA
Participated in Urban Stormwater Workgroup meeting on 9/17/19	9/19	NA
Participated in Modeling Team meeting on 10/24	10/19	NA
Participated in WQGIT meeting on 10/15/19	10/19	NA
Co-chaired Modeling Workgroup meeting on 10/8/19-10/9/19	10/19	NA
Participated in Urban Stormwater Workgroup meeting on 10/15/19	10/19	NA
Participated in LUWG Mtg on 11/6/19	11/19	NA
Participated in WTWG Mtg. on 11/7/19	11/19	NA
Participated in Modeling Team meetings on 10/29/19 and 11/19/19	11/19	NA
Participated in WQGIT meeting on 11/12/19	11/19	NA
Participated in WV Trib Team Mtg. on 11/13/19	11/19	NA
Participated in Modeling Team meetings on 12/3/19, 12/19/19, 12/17/19	12/19	NA
Participated in joint LUWG/FWG Mtg on 12/4/19	12/19	NA
Co-chaired Modeling Workgroup meeting on 12/5/19	12/19	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in WQGIT meeting on 12/9/19	12/19	NA
Participated in joint TCW/WWTWG Mtg. on 12/11/19	12/19	NA
Co-chaired MWG Quarterly Mtg. on 1/7,1/8/20	1/20	NA
Participated in WQGIT meeting on 1/13/20	1/20	NA
Participated in WV Trib Team Mtg. on 1/10/20	1/20	NA
Participated in Modeling Team meetings on 1/14/20 and 1/21/20	1/20	NA
Participated in AGWG meeting on 1/16/20	1/20	NA
Prepared WV senior leadership on 1/15/20 for 1/24/20 PSC meeting	1/20	NA
Participated in Modeling Team meeting on 2/4/20	2/20	NA
Co-chaired MWG Quarterly Mtg. on 2/4/20	2/20	NA
Participated in WQGIT face-to-face Climate Mtg. on 2/10/20 and 2/11/20	2/20	NA
Participated on EPA/WV 2yr milestone call on 2/12/20	2/20	NA
Participated in WV Trib Team Mtg. on 2/19/20	2/20	NA
Participated in Modeling Team meetings on 2/25, 3/3, 3/17, 3/24, 3/31	3/20	NA
Participated in AGWG meeting on 3/3/20	3/20	NA
Participated in LUWG meeting on 3/4/20	3/20	NA
Participated in WTWG meeting on 3/5/20	3/20	NA
Participated in WVDEP/CBP CAST 2019 call on 3/20/20	3/20	NA
Participated in WQGIT meeting on 3/23/20	3/20	NA
Participated in AGWG meeting on 4/16/20	4/20	NA
Co-chaired MWG Quarterly Mtg. on 4/7/20 and 4/8/20	4/20	NA
Participated in Modeling Team meetings on 4/14/20 and 4/21/20	4/20	NA
Participated in WQGIT meeting on 4/27/20	5/20	NA
Participated in Modeling Team meetings on 4/28, 5/5 and 5/19/20	5/20	NA
Participated/presented at WV Tributary Team Mtg. on 4/30/20	5/20	NA
Participated in WTWG meeting on 5/7/20	5/20	NA
PSC preparation with DEP senior management on 5/20/20	5/20	NA
Participated in EPA/WV 2 yr. MS call on 5/18/20	5/20	NA
Participated in Modeling Team meetings on 6/2/20, 6/16/20, 6/23/20	6/20	NA
Participated in WQGIT meetings on 5/26/20 and 6/22/20	6/20	NA
Participated in joint MWG, CRWG, USWG meeting on 6/16/20	6/20	NA
Participated in WVDEP/CBPO CAST 2019 meeting on 6/11/20	6/20	NA
Participated in WV Tributary Team Mtg. on 6/24/20	6/20	NA
PSC preparation with DEP senior management on 6/24/20	6/20	NA
Participated in Modeling Team meetings on 6/30/20, 7/14/20, 7/21/20	7/20	NA
Participated in Management Board Mtg. on 7/9/20	7/20	NA
Participated in WQGIT meeting on 7/13/20	7/20	NA
Co-chaired MWG Quarterly Mtg. on 7/7/20 and 7/8/20	7/20	NA
Participated in AGWG meeting on 7/16/20	7/20	NA
Prepared WV senior leadership for 7/9/20 MB and 7/16 PSC calls	7/20	NA
Participated in Modeling Team meetings on 7/28, 8/4, 8/11, and 8/18/20	8/20	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in WQGIT meeting on 7/27/20	8/20	NA
Prep DEP management re WQGIT Climate change allocation 8/19/20	8/20	NA
Represented WV on WWTWG Call with new leadership 8/20/20	8/20	NA
TD #4: MD Septic Support		
Technical Memo: Data Collection and Spatial Analysis Update	11/18	2
Notes from December 4, 2018 progress call	12/18	2
Notes from December 28, 2018 progress call	12/18	2
Notes from January 31, 2019 and February 14, 2019 progress calls	2/19	2
GIS package deliverable	3/19	3
Prioritization tool deliverable	3/19	3
Draft and final report	3/19	2
TD #6: Statistical Support		
Participated in technical meetings (4/30, 5/22)	5/18	NA
Rmd script for performing GAM analyses for multiple flow averaging windows	5/18	1
Updated baytrends, v1.0.3 (5/3) and v1.0.4 (5/14)	5/18	1
R and Rmd script for sending output to multiple files (5/11)	5/18	1
Participated in technical meetings (6/22, 6/27)	6/18	NA
R script demonstrating baytrends:gamPlotDisp (6/26)	6/18	1
R script and functions for post-processing figures including time series and slope plots (6/26)	6/18	1
R script demonstrating how to average data from multiple layers (6/26)	6/18	1
baytrends, v1.0.7 posted to CRAN	7/18	4
Draft deSeasonalize function	7/18	1
Draft added variable plot procedure	7/18	1
Revised baytrends function, computeResiduals (formerly deSeasonalize)	8/18	1
Example Potomac River analyses	8/18	1
Revised plotting functions func_make_2column_figures and func_make_slope_plots	9/18	1
Revised algorithm to compute seasonally average time series	1/19	1
Uploaded baytrends v1.1.0 to CRAN	3/19	1
Variable documentation spreadsheet for baytrends	3/19	1
Pre-release baytrends v1.1.0.9002—improved error trapping	6/19	1
Pre-release baytrends v1.1.0.9003—seasonal analyses	6/19	1
Pre-release baytrends v1.1.0.9004—punch list items related to error trapping and seasonal analyses	6/19	1
Shiny app tool to create maps	9/19	1
Uploaded v1.2.1 baytrends to CRAN and submitted a summary memo	3/20	1
v1.2.1.8011 baytrends upgrade for survival::Surv	7/20	2
v1.1.0.9003 baytrendsmap	7/20	2
TD #7. DE WIP Support		
Participated in WIP steering committee planning mtg.	5/18	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in Ag and Developed Sector WIP mtgs.	6/18	NA
Participated in Ag Sector WIP meeting.	12/18	NA
Draft Ag Sector WIP Fact Sheet	12/18	3
Draft Phase III WIP for public and EPA review	4/19	3
Response to comments appendix for revised Phase III WIP	8/19	2
TD #8. WV GI Planning		
Draft presentation, factsheets and expression of interest form	10/18	1
Revised presentation and factsheets	11/18	1
Maps for Romney workshop	7/19	2
Facilitated workshop in Romney	8/19	1
Martinsburg site assessment	11/19	2
Romney Draft Workshop Memo	12/19	2
Maps for Martinsburg workshop	1/20	2
Facilitated and presented at public meeting and workshop in Martinsburg	1/20	1
Romney Final Workshop Memo	1/20	3
Romney Preliminary Cost Estimate	2/20	2
Romney G3 grant application assistance	3/20	2
Martinsburg draft Workshop and Concept Design report	4/20	3
Martinsburg updated draft Workshop and Concept Design report	4/20	3
Final Martinsburg Workshop and Concept Design Report	8/20	3
TD #9. Conowingo WIP Support		
Conowingo WIP Steering Committee Presentation	2/19	2
Conowingo WIP Steering Committee Presentation and matrix	3/19	2
Conowingo WIP Steering Committee Presentation	5/19	2
Conowingo WIP Steering Committee Presentation	6/19	2
Draft Documentation for WIP	6/19	2
Final draft Documentation for WIP	7/19	2
TD #11. Trading and Offsets Support		
Project schedule	6/19	1
Assessment report outline	6/19	1
Draft executive summary for Virginia's trading and offset program	9/19	2
TD #12. SAV Fact Sheets		
Submitted SAV Fact Sheets	11/19	3
TD #13 NY BMP Verification		
Deliverable #1 – Technical memorandum documenting developed sector review	7/20	2
Task 5. Decision Support Tools		
TD #3. Decision Support Tool Development (conducted by subcontractors DEC and J7)		
DE Developed Sector CAST training materials and Summaries of Most Cost Effective Ag and Developed BMPs in DE	9/18	NA
NY Phase III WIP Summary Presentation	9/18	NA

*1 = Minimal review is done by the author, including electronic spell/grammar-checking and proof-reading. 2 = Internal review of deliverable not intended to be widely distributed is performed by an impartial person (i.e., technical staff member or editor). 3 =

Review of deliverable is performed by a qualified senior-level person and a technical editor, as appropriate. 4 = Final release of major deliverable that will be widely distributed. This review consists of QA/QC review level 3 plus review/final release by both the Tt Technical Monitor and Tt Project Manager. C = Final release of contract documents (e.g., work plan, progress report, invoices) by Tt Program Manager, Project Manager, and Contracts Management staff. P = External peer-review is done if requested by the EPA Project Manager.

DIFFICULTIES ENCOUNTERED AND REMEDIAL ACTION TAKEN DURING REPORTING PERIOD:

- Nothing to report

ACTIVITIES NEXT REPORTING PERIOD:

Task 1. Kickoff and Management

- Prepare and submit invoice and progress report.
- Communicate regularly with the TOCOR.

Task 2. BMP Panels

- Wastewater Workgroup Support (TD #5)
 - This task is complete unless EPA requests additional support.

Task 3. Modeling Input Data

- Model Report Editing (TD #10)
 - This task is complete unless EPA requests additional support.

Task 4. WIP Support

- Communications Support (TD #1)
 - Participate in project status calls with the task leader. Submit agendas prior to the calls and action items after the calls.
 - Continue to update the searchable case studies table with leads identified by the WEAT team, Communications team, Bay Journal, and Bay News and Chesapeake Current list serves.
 - Continue to research data sources to develop economic infographics.
 - Develop recreation infographics based on OIA data, if requested.
 - Submit the draft Prince George's County trees case study.
 - Continue to prepare the case studies spreadsheet for submission to the Data Dashboard.
 - Continue to coordinate with the Data Dashboard staff and make recommendations on the draft case studies search tool.
 - Begin development of additional case study buildouts.
 - Submit the Climate Resiliency Fact Sheet, if requested.
 - Update the Fish Habitat Fact Sheet, if requested.
 - Prepare and update communication materials, as requested.
- WV WIP Support (TD #2)
 - Participate in Modeling Team calls.
 - Participate in WWTWG mtg on 9/1/20.
 - Participate in LUWG mtg. on 9/2/20.
 - Participate in AGWG mtg. on 9/17/20.
 - Participate in Management Board Mtg. on 9/17/20 if needed re: climate change
 - Co-chair MWG Meeting 9/10/20.
 - Participate in WQGIT Mtg. on 8/24/20 and 9/28/20 and additional SRS mtg. if needed.
 - Participate in WV Trib Team call 8/26/20.

- Provide technical assistance to WV, as needed.
- Statistical Support (TD #6)
 - Continue to participate in technical conference calls.
 - Present baytrendsmap tool and draft Patuxent River analyses at technical conference calls.
- DE WIP Support (TD #7)
 - This task is complete unless EPA requests additional support.
- MD Septic Support (TD #4)
 - This task is complete. No additional work is anticipated.
- WV GI Planning (TD #8)
 - Hold additional coordination calls, as needed, during full engineering design work.
- Conowingo WIP Support (TD #9)
 - Additional work not anticipated.
- Trading and Offsets Support (TD #11)
 - Awaiting EPA instruction to proceed.
 - Continue with executive summaries for trading and offset programs in each state.
 - Revise draft executive summary for Virginia's trading and offset program based on EPA's comments with a focus on changes after 2016.
 - Discuss revised version of executive summary for Virginia with EPA and proceed with other jurisdictions as directed by EPA.
- SAV Fact Sheets (TD #12)
 - This task is complete. No additional work is anticipated.
- New York Developed Sector BMP Support (TD #13)
 - Submit draft statistical survey procedures for deliverable #2.

Task 5. Decision Support Tools

- Decision Support Tool Development (Work conducted by subcontractors DEC and J7) (TD #3):
 - Participate in scheduled meetings.
 - Respond to CAST questions and requests for assistance.
 - Incorporate additional functionality into CAST.
 - Support the incorporation of co-benefits in CAST.
 - Identify improvements in data for CAST-21.
 - Support users in analyzing results and using CAST.
 - Respond to user questions about changes in CAST2019.
 - Fix point source app QAQC issues.
 - Continue NEIEN portal development.
- Development, Deployment, and Maintenance of CBPO Monitoring and Modeling Applications in Cloud-based Environments (TD #14)
 - Finalize initial design and prototype for public report data generation for CoreCast model generation process.
 - Complete actual implementation of public report data generation for CoreCast and update internal Confluence documentation to describe approach and technical foundations.
 - Provide CBPO technology team with the ability to start end to end QA on public report generation process and support QA efforts as scheduled (if scheduled prior to end of September).

Task 6. Exchange Network-Based BMP Tracking

- No work anticipated.